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irregularities [at a level] of a height <sup>from about 0.1 micrometers to</sup> ~~less than~~ the wavelength of visible light[, and which is anti-contaminating].

10. (Amended) The [water-] water and [oil-repelling adsorbing] oil repelling film according to [one of claims] claim 7 [and] or 8, wherein said substrate is a plastic film.

Claims 11-23, line 1 of each, change "water- and oil-repelling adsorbing" to --water and oil repelling--.

#### REMARKS

The claims in this application have been rewritten to respond to the Examiner's helpful suggestions made during the interview of January 14, 1993. A new Declaration will be submitted after the filing of this amendment in response to the Examiner's rejection as soon as it is received by the undersigned. The new Declaration will include the date of execution, and will be in full compliance with 37 CFR 1.67(a), by identifying the application by its serial number and filing date.

Claims 1-11 have been revised to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. in response to the Examiner's request for distinctive language as to "monomolecular film" and "surface irregular film", Applicants have amended claims 1 and 6 and have added the Markush language is added to claim 7 and 8 in response to the Examiner's request. With regard to claim 8, Applicants maintain that glass, ceramics, stone and semiconductors are indeed proper subject matter for the claim, since they have common utility in the invention and do not necessarily overlap.

Further, a Markush claim is not necessarily defective simply because one or more of its members may have a common element.

The Title has been amended in compliance with the Examiner's suggestion.

Claims 1-10 stand rejected under 35 USC 103 on Kido in view of Ogawa '316 and Inoguchi.

This invention is a water and oil repelling film formed on a substrate surface, wherein the film is a chemically adsorbed film with an outer surface having irregularities exceeding 10 nanometers. The films of the invention may be used on electrical products, vehicles, and industrial apparatus requiring such a film, including glass, ceramic metal and plastic products.

Further, this invention is a chemically adsorbed film which is bonded by covalent bonds to the substrate surface, and the chemically adsorbed film is a monomolecular or polymer film comprising a  $-CF_3$  group and a siloxane group wherein the  $-CF_3$  group is at the outer surface of the chemically adsorbed film.

Kido does not disclose the claimed film. Instead, Kido merely describes a resin laminate of one layer of a polyimide resin film, wherein undulations of  $0.03-5\text{ }\mu\text{m}$  (between 30 and 5,000 nanometers) are seen. This present invention, on the other hand, uses surface irregularities of a size that is in a range not nearly so great as the size of the surface irregularities disclosed in the Kido reference.

The Kido reference teaches away from an invention comprising surface irregularities which are of the size of the irregularities in this present invention. In Kido, it is clearly

stated that "if the undulations are less than 30 nanometers, no sufficient improvement in slidability can be hoped for". Kido, column 2, line 47. It is seen then, that the Kido reference directly teaches away from the range of size of the surface irregularities which are claimed in the present invention.

Further, Kido states clearly that adding particles of less than 1  $\mu\text{m}$  (1,000 nanometers) has little influence on the film's physical properties. Kido, column 3, line 5. In contrast, the surface irregularities of the present film are in a range that is much less than 1,000 nanometers.

The Kido reference does not disclose a  $-\text{CF}_3$  group and a siloxane group, wherein the  $-\text{CF}_3$  group is at the outer surface of the chemically adsorbed film. Kido clearly does not, by itself or in combination with other references, teach the invention claimed by Applicants.

The Ogawa '316 patent describes a recording medium which comprises a recording layer formed on a base body, and a protection layer formed on the recording layer. Ogawa '316 does not disclose a water and oil repelling adsorbing film formed on a substrate surface, where the film is a chemically adsorbed film having an outer surface with irregularities exceeding 10 nanometers, and further comprising a  $-\text{CF}_3$  group and a siloxane group, wherein the  $-\text{CF}_3$  group is at the outer surface of the chemically adsorbed film. Ogawa '316 represents one of the many prior art references that disclose a silane surface active agent applied to a recording medium. It does not teach the surface irregularities of the size range described in the present

invention, nor does it teach the use of a  $-CF_3$  group at the outer surface of a chemically adsorbed film as disclosed in the present invention.

Inoguchi teaches a glass fiber product for use in the reinforcement of fluororesin. It describes thermoplastic materials, and inorganic fillers. The Inoguchi reference does not teach a water and oil repelling adsorbing film formed on a substrate surface, where the film is a chemically adsorbed film with an outer surface having irregularities exceeding 10 nanometers, nor does it teach a film comprising a  $-CF_3$  group and a siloxane group, wherein the  $-CF_3$  group is at the outer surface of the chemically adsorbed film.


The Ohno reference discloses a magnetic recording medium having a magnetic film formed on a substrate directly or through an underlayer from an alloy containing cobalt as a principal component. Ohno describes a magnetic film for use in, for example, a magnetic disk system. It is unrelated to the present invention. The present invention is a water and oil repelling film formed on a substrate surface, not a magnetic recording film, and cobalt is not part of the composition of the present invention. The fact that the Ohno reference describes surface roughness as provided on a magnetic film recording medium does not teach or make obvious, alone or in combination, the invention claimed in this patent application. Ohno does not disclose films of the type claimed, in which the film is bonded by covalent bonds to the substrate surface, where the chemically adsorbed film is a monomolecular or polymer film comprising a -

CF<sub>3</sub> group and a siloxane group, wherein the -CF<sub>3</sub> group is at the outer surface of the chemically adsorbed film.

There is no teaching in the art that would indicate a motivation or reason why a person skilled in the art would combine the multiple references cited by the Examiner to devise somehow the invention claimed in this application.

Early issuance of a Notice of Allowance is respectfully requested.

Respectfully submitted,



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